इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 13629 (2004): Textiles Machinery - Stainless Steel Drying Cylinders Used in Textile Processing [TXD 21: Dyeing, Finishing and Allied Machinery and Accessories]

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN
IGNORANTIA JURIS NON EXCUSAT
PROTECTED BY COPYRIGHT

भारतीय मानक

वस्त्रादि मशीनरी—वस्त्रादि प्रकमण में प्रयुक्त स्टेनलैस स्टील के शुष्कन सिलिंडर — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

TEXTILES MACHINERY — STAINLESS STEEL DRYING CYLINDERS USED IN TEXTILE PROCESSING — SPECIFICATION

(First Revision)

ICS 59.120.01

© BIS 2004

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 2004

Price Group 2

Dyeing, Finishing and Allied Machinery and Accessories Sectional Committee, TX 21

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Dyeing, Finishing and Allied Machinery and Accessories Sectional Committee had been approved by the Textile Division Council.

This standard was first published in 1992 and has been revised to include drying cylinders of 800 mm outside diameter which are also commonly used in the industry. Besides, tolerances for cylindricity and total run-out have been modified as per latest industrial practices. Also requirement for anti-collapsible ring has been included .

Drying cylinder is a cylindrical shell fabricated from stainless steel sheet and is used for drying in textile processing. It is heated with steam supplied at a pressure up to 0.39 MPa (4.0 kgf/cm^2). The steam loses its heat during the process of heat transfer to the surface of cylinder and in turn to the fabric being processed on the drying cylinder. The entire assembly of the drying cylinder comprising cylinder shell, side flanges, trunnions and their required joints may have design features in accordance with IS 2825 'Code for unfired pressure vessels'.

The composition of the Committee responsible for formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES MACHINERY — STAINLESS STEEL DRYING CYLINDERS USED IN TEXTILE PROCESSING — SPECIFICATION

(First Revision)

1 SCOPE

This standard specifies the materials, components and the main dimensions, tolerances and designation of stainless steel drying cylinders used for drying in textile processing.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IS No.	*Title*
226 : 1975	Structural steel (standard quality) (*fifth revision*)
2500 (Part 1) : 2000	Sampling and inspection procedures: Part 1 Attribute sampling plan indexed by acceptable quality level (AQL) for lot-by-lot inspection (*third revision*)
2825 : 1969	Code for unfired pressure vessles
6911 : 1992	Stainless steel plate, sheet and strip (*first revision*)

3 FACE LENGTH OF CYLINDER

The face length of cylinder shall match the nominal width of textile finishing machines for treatment of textile fabrics in open width.

NOTE — Face length of cylinder is also called cylinder face and is equal to the fabric width in millimetres plus a minimum of 200 mm.

4 MATERIALS

4.1 Shell

The cylinder shall be fabricated from stainless steel sheets equivalent to 04 Cr 18 Ni 10 (*see* IS 6911) or any other grade of stainless steel for better resistance to corrosion.

4.2 Side Flanges

Side flanges shall be manufactured from tested steel plate according to IS 226.

5 COMPONENTS

5.1 Side Flanges (End Flanges)

Side flanges shall be either dished or flat and thickness of material shall be according to design features of IS 2825. The side flanges will be provided with a concentric bore and number of holes on a concentric circle to hold the trunnions of the cylinder (*see* Fig. 1).

5.2 Vacuum Breaker Valve (Breather)

To safeguard the failure of cylinder shell against vacuum during the process of condensation of steam, two vacuum breaker valves (air breather valve) manufactured from non-corrosive material with suitable fittings shall be provided at 180° on side flanges.

5.3 Drain Cock

A drain cock manufactured from non-corrosive material with fittings, if any shall be provided for the purpose of draining the condensate completely from the cylinder.

5.4 Anti-collapsible Ring

The cylinder shall be provided with required number of rings inside it to protect it from collapsing due to vacuum created inside the cylinder due to condensation of steam and non-working of vacuum breaker valve when inlet and outlet lines of the cylinder are air-tight.

Cylinder should be able to withstand at least 0.02 MPa (0.2 bar) pressure below the atmospheric pressure.

6 MANUFACTURE

6.1 The surface of stainless steel sheet of drying cylinder shall be smooth finished including the welding of the longitudinal seam and circumferential joint. The longitudinal seam and circumferential joint shall also be checked for welding strength as specified by the buyer. The cylinder shell weldments shall be carried out by argon arc welding process and shall be free from defects such as pin holes, under cuttings, uneven surface, improper weld finish, cavities, etc. Weldments of cylinder shell and side flanges shall be carried out preferably by argon arc welding process or any other standard welding method. The number of longitudinal seams shall be limited up to 2. The circumferential joint for cylinder shell should be avoided but in any case it should not exceed one in number.

6.1.1 The surface finish shall be 2B (*see* IS 6911).

6.1.2 Surface treatment of the cylinder like coating of PTFE (Teflon) or by any other means shall be agreed to between the buyer and the manufacturer. In case of treatment with PTFE the coating shall be 50 microns, *Min.*

6.2 The cylinder shell, trunnions and joints shall be checked for their tightness and rendered leak proof by a suitable sealing gasket as agreed to between the buyer and the manufacturer.

7 DIMENSIONS AND TOLERANCES

7.1 Dimensions

The stainless steel drying cylinder shall conform to dimensions given in Table 1 when read with Fig. 1.

7.2 Tolerances

The drying cylinder shall conform to tolerances as given in Table 2.

8 DESIGNATION

The designation of a drying cylinder shall include the following information in the order given:

a) Stainless steel drying cylinder;
b) Outside diameter of drying cylinder in mm (Ø *D*);
c) Face length of cylinder, *L*, in mm; and
d) Face to face length of side flange, *L*1, mm.

Example :

A stainless steel drying cylinder having outside diameter of 800 mm, cylinder face 2 000 mm and face to face length of side flange of 1 972 mm shall be designated as follows:

Stainless steel drying cylinder Ø 800 × 2 000/1 972

9 MARKING

Each cylinder shall bear the following information:

a) Name of manufacturer,
b) Maximum working pressure,
c) Test pressure,
d) Thickness of shell,
e) Diameter of shell, and
f) Identification Mark.

9.1 BIS Certification Marking

The cylinder may also be marked with the Standard Mark.

9.1.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

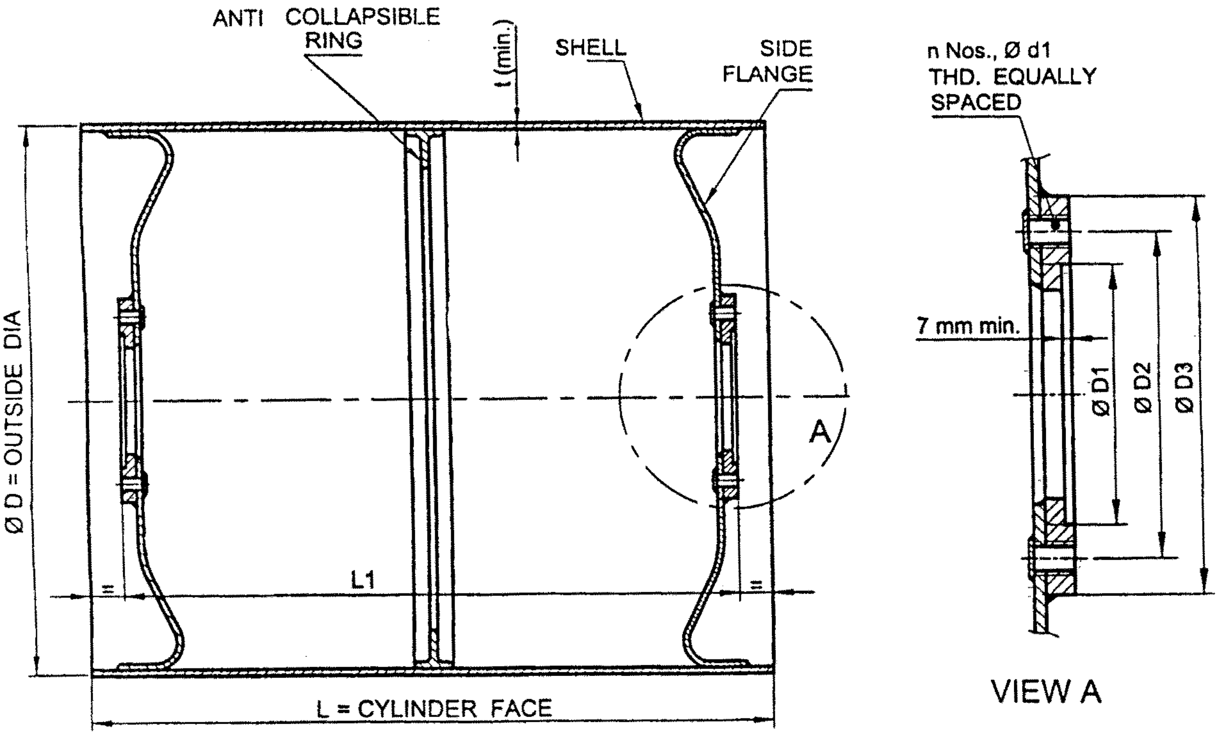
10 SAMPLING

To ascertain the conformity of stainless steel drying cylinders to the requirements of this specification single sampling plan with Inspection Level I and Acceptance Quality Level (AQL) of 5 percent given in Tables 1 and 2 of IS 2500 (Part 1) shall be followed unless otherwise agreed to between the purchaser and the manufacturer.

Table 1 Dimensions of Cylinder

(*Clause* 7.1)

Sl No.	Dimensions (mm)								Maximum Working Pressure (MPa)
	Cyl Dia Ø *D*	Ø *D*1	Ø *D*2	Ø *D*3	*n*	Ø *d*1	*t*	*L*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	800	200	250	305	8	M20 × 2.5P	2.5	L-28	5
ii)	762	203.2	254	305	8	M16 × 2P	2.0	L-40	4
iii)	562	152.4	203.2	255	6	M16 × 2P	1.5	L-114	4



All dimensions in millimetres.

FIG. 1 STAINLESS STEEL DRYING CYLINDER

Table 2 Tolerances

(*Clause* 7.2)

Sl No.	Characteristic	Tolerance
i)	Diameter	+1 mm
ii)	Cylindricity	+0.6 mm
iii)	Total run-out, *Max*	1.2 mm per meter run
iv)	Admissible residual unbalance of cylindrical shell, *Max*	200 g (Static balancing method)

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Dyeing, Finishing and Allied Machinery and Accessories Sectional Committee, TX 21

Organization	*Representative(s)*
Kusters Calico Machinery Ltd, Mumbai	Shri Rasik Parekh (***Chairman***)
A.T.E. Enterprises Pvt Ltd, Mumbai	Representative
Ahmedabad Textile Industry's Research Association, Ahmedabad	Shri V. Vijay Kumar Shri B. Nanda (*Alternate*)
Alok Textile Industries Ltd, Mumbai	Representative
Central Coir Research Institute, Alleppey	Representative
Century Textiles & Industries Limited, Mumbai	Shri J. L. Khandelwal
Federation of Indian Textile Engineering Industry, Mumbai	Representative
Harish Textile Engineers Pvt Ltd, Mumbai	Shri Sanjay Kowarkar Shri V. R. Dhanuka (*Alternate*)
Indian Spinners Association, Mumbai	Shri Ashok Mehta
Indian Woollen Mills' Federation, Mumbai	Dr G. S. Singh Shrimati G. P. Rane (*Alternate*)
Man-Made Textiles Research Association, Surat	Dr Sanndeep R. Naik Shri M. G. Parikh (*Alternate*)
National Textile Corporation Ltd, Mumbai	Shri V. S. Madhok Shri S. M. Pai (*Alternate*)
Office of the Textile Commissioner, Mumbai	Shri A. J. Jassal Shri R. A. Lal (*Alternate*)
Rajasthan Spinning and Weaving Mills Ltd, Gulabpura, Rajasthan	Representative
Textile Machinery Manufacturers' Association, Mumbai	Shri M. A. Shah Shri Harish G. Mehta (*Alternate*)
Textiles Committee, Mumbai	Shri D. P. Jadeja Shri Harbhajan Singh (*Alternate*)
The Bombay Dyeing & Manufacturing Co Ltd, Mumbai	Representative
The Bombay Textile Research Association, Mumbai	Shri S. N. Gharat Shri V. L. Patkar (*Alternate*)
The Hindoostan Spg & Wvg Mills Limited, Mumbai	Shri Shripad G. Oak
The Khatau Makanji Spg & Wvg Co Limited, Mumbai	Shri S. S. Sheth
The Morarjee Gokuldas Spg & Wvg Co Limited, Mumbai	Shri S.V. Saudagar
The Synthetic & Art Silk Mills Research Association, Mumbai	Representative
The Synthetic & Art Silk Mills Association, Mumbai	Shri Kaval Mehra Shri V. S. Chalke (*Alternate*)
Vardhman Spinning & General Mills Ltd, Ludhiana	Shri V. K. Goyal Shri Anup Goswami (*Alternate*)
Veermata Jijabai Technological Institute, Mumbai	Prof G. W. Joshi Prof K. D. Gawand (*Alternate*)
BIS Directorate General	Shri P. Bhatnagar, Director & Head (TXD) [Representing Director General (*Ex-officio*)]

Member-Secretary
Shri Arun Singh
Joint Director (TXD), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publication), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc: No. **TX 21 (0541)**.

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *website* : www.bis.org.in

Regional Offices:

		Telephones
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	2323 7617 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi KOLKATA 700054	2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	260 3843 260 9285
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	2832 9295, 2832 7858 2832 7891, 2832 7892

Branches : AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. NALAGARH. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.

Printed at Simco Printing Press, Delhi